

III. CLAIM AMENDMENTS

1. (Cancelled)

2. (Currently Amended) A method according to claim 1, 67, |
wherein said prediction error block check comprises at least the
following stages:

- a first calculation stage in which a first reference value is produced on the basis of prediction error information contained in said at least one prediction error block, and
- a first comparison stage in which the first reference value calculated in the first calculation stage is compared to a first value range, wherein if the first reference value falls outside said first value range, the inter-coded image information for the image block is considered to contain at least one error.

3. (Original) A method according to claim 2, wherein in the prediction error block check a luminance prediction error block containing prediction error information relating to a luminance component of the image signal is used in the calculation of said first reference value.

4. (Original) A method according to claim 2, wherein in the prediction error block check a chrominance prediction error block containing prediction error information relating to a chrominance component of the image signal is used in the calculation of said first reference value.

5. (Cancelled)

6. (Currently Amended) A method according to claim 5 67, wherein in the prediction error block check said first calculation stage is performed for each of said at least one luminance prediction error block and for each of said at least one chrominance prediction error block of said macroblock to produce a first reference value for each of said at least one luminance prediction error block and each of said at least one chrominance prediction error block of said macroblock and a corresponding first comparison stage is performed for each of said at least one luminance prediction error block and each of said at least one chrominance prediction error block of said macroblock, wherein if any of said first reference value for said at least one luminance prediction error block or said at least one chrominance prediction error block of said macroblock falls outside said first value range, the inter-coded image information for the image block is considered to contain at least one error.

7. (Original) A method according to claim 6, wherein in the prediction error block check said first calculation stage and said first comparison stage are performed consecutively for each of said at least one luminance prediction error block and each of said at least one chrominance prediction error block of said macroblock, and each of said at least one luminance prediction error block and said at least one chrominance prediction error block of said macroblock is examined in a sequence, such that the sequence is terminated if any of said first reference value for said at least one luminance prediction error block or said at least one chrominance prediction error block of said macroblock falls outside said first value range and the inter-coded image

information for the image block is considered to contain at least one error.

8. (Original) A method according to claim 6, wherein in the prediction error block check said first calculation stage and said first comparison stage are performed substantially immediately as each of said at least one luminance prediction error block or each of said at least one chrominance prediction error block of said macroblock is received.

9. (Original) A method according to claim 6, wherein in the prediction error block check said first calculation stage and said first comparison stage are performed for each of said at least one luminance prediction error block and each of said at least one chrominance prediction error block of said macroblock after all of said at least one luminance prediction error block and all of said at least one chrominance prediction error block of said macroblock have been received.

10. (Original) A method according to claim 6, wherein in the prediction error block check said first value range is assigned a first value when said comparison stage is performed on said at least one luminance prediction error block of said macroblock and a second value, different from said first value, when said first comparison stage is performed on said at least one chrominance prediction error block of said macroblock.

11. (Original) A method according to claim 6, wherein in the prediction error block check if said first reference value calculated for any of said at least one luminance prediction error block or any of said at least one chrominance prediction

error block of said macroblock falls within said first value range, said first reference value is stored in a memory.

12. (Currently Amended) A method according to claim 5 67, wherein if no errors are detected in the prediction error block check, a macroblock check is performed in which a correspondence between prediction error information relating to the luminance component of the image signal and prediction error information relating to at least one of said at least one chrominance component of the image signal is examined to detect errors in the inter-coded image information for the image block.

13. (Original) A method according to claim 12, wherein said macroblock check comprises the following stages:

- a second comparison stage in which a second reference value calculated on the basis of said at least one chrominance prediction error block of said macroblock is compared with a second value range, wherein if the second reference value falls outside said second value range, a difference calculated on the basis of said at least one luminance prediction error block and said at least one chrominance prediction error block of the macroblock is compared with a third value range, wherein if the difference falls outside said third value range, the inter-coded image information for the image block is considered to contain at least one error.

14. (Original) A method according to claim 13, wherein said second reference value calculated on the basis of said at least one chrominance prediction error block of said macroblock is identical to a corresponding first reference value calculated

for said at least one chrominance prediction error block of said macroblock during said prediction error block check, said corresponding first reference value having been stored in a memory in connection with said prediction error block check and retrieved from said memory during said macroblock check.

15. (Original) A method according to claim 13, wherein said second value range is smaller than said first value range.

16. (Original) A method according to claim 13, wherein if said difference calculated on the basis of said at least one luminance prediction error block and said at least one chrominance prediction error block falls within said third value range and said macroblock comprises at least one other chrominance prediction error block, said second comparison stage is repeated using said at least one other chrominance prediction error block of said macroblock.

17. (Original) A method according to claim 13, wherein if said second reference value falls within said second value range and said macroblock comprises at least one other chrominance prediction error block, said second comparison stage is repeated using said at least one other chrominance prediction error block of said macroblock.

18. (Original) A method according to claim 12, wherein the image block is reconstructed using said inter-coded image information for the image block after said macroblock check is performed.

19. (Original) A method according to claim 12, wherein the image block is reconstructed using said inter-coded image information for the image block before said macroblock check is performed.

20. (Currently Amended) A method according to claim 5 67, wherein the prediction error information contained in said at least one luminance prediction error block and said at least one chrominance prediction error block of said macroblock comprise pixel error values and said pixel error values of said at least one luminance prediction error block and said pixel error values of said at least one chrominance prediction error block are filtered to determine pixel error values of said at least one luminance prediction error block and said at least one chrominance prediction error block which are significant with respect to a threshold value and a third comparison stage is performed in which significant pixel error values comprised by said at least one chrominance prediction error block of said macroblock are compared with pixel error values at corresponding locations in said at least one luminance prediction error block, wherein if the number of locations for which a pixel error value in said at least one chrominance prediction error block is significant with respect to said threshold value and a pixel error value at a corresponding location in said at least one luminance prediction error block is not significant with respect to said threshold value exceeds a fourth value range (R4), the inter-coded image information for the image block is considered to contain at least one error.

21. (Original) A method according to claim 20, wherein the filtering is performed by thresholding the pixel error values of said at least one luminance prediction error block and said at least one chrominance prediction error block.

22. (Original) A method according to claim 20, wherein the filtering is performed by high-pass filtering the pixel error

values of said at least one luminance prediction error block and said at least one chrominance prediction error block.

23. (Original) A method according to claim 20, wherein a spatial resolution of said at least one luminance prediction error block of said macroblock is greater than a spatial resolution of said at least one chrominance prediction error block of said macroblock, wherein down-sampling of the pixel error values of said at least one luminance prediction error block is performed so as to reduce the spatial resolution of said at least one luminance prediction error block to correspond with the spatial resolution of said at least one chrominance prediction error block of said macroblock.

24. (Original) A method according to claim 20, wherein a spatial resolution of said at least one luminance prediction error block of said macroblock is greater than a spatial resolution of said at least one chrominance prediction error block of said macroblock, wherein up-sampling of pixel error values of said at least one chrominance prediction error block is performed so as to increase the spatial resolution of said at least one chrominance prediction error block to correspond with the spatial resolution of said at least one luminance prediction error block of said macroblock.

25. (Currently Amended) A method according to claim ~~1~~ 67, wherein the prediction error information contained in said at least one prediction error block comprises pixel error values and a discrete cosine transform is applied to the pixel error values at the coding stage in order to form spatial frequency domain prediction error coefficients, wherein an inverse discrete cosine

transform is applied to the spatial frequency domain prediction error coefficients prior to said prediction error block check.

26. (Currently Amended) A method according to claim ~~1~~67, wherein variable length code words are used in the coding of said at least one prediction error block.

27. (Currently Amended) A method according to claim ~~1~~67, wherein the image signal is produced from a video signal.

28. (Currently Amended) A method according to claim ~~1~~67, wherein said inter-coded image information is transmitted from a first terminal to a second terminal, wherein at least said coding stage is performed prior to transmission of said inter-coded image information from said first terminal and said decoding stage and said prediction error block check are performed in said second terminal.

29. (Original) A method according to claim 12, wherein said inter-coded image information is transmitted from a first terminal to a second terminal, wherein at least said coding stage is performed prior to transmission of said inter-coded image information from said first terminal and said decoding stage and said macroblock check are performed in said second terminal.

30.-31. (Cancelled)

32. (Currently Amended) A terminal according to claim ~~31~~68, wherein said means for performing a prediction error block check comprise:

- means for producing a first reference value on the basis of prediction error information contained in said at least one prediction error block, and
- means for comparing the first reference value with a first value range,
- means for indicating that the inter-coded image information for the image block is considered to contain at least one error if the first reference value falls outside said first value range.

33. (Currently Amended) A terminal according to claim 31 68, wherein means for producing a first reference value comprise means for using a luminance prediction error block containing prediction error information relating to a luminance component of the image signal in the calculation of said first reference value.

34. (Currently Amended) A terminal according to claim 31 68, wherein means for producing a first reference value comprise means for using a chrominance prediction error block containing prediction error information relating to a chrominance component of the image signal in the calculation of said first reference value.

35. (Cancelled)

36. (Currently Amended) A terminal according to claim 35 68, wherein said means for performing a prediction error block check comprise:

means for performing said first calculation stage for each of said at least one luminance prediction error block and for each of said at least one chrominance prediction error block of said macroblock to product a first reference value of each of said at least one luminance prediction error block and each of said at least on chrominance prediction error block of said macroblock;

- means for performing said first comparison stage for each of said at least one luminance prediction error block and each of said at least one chrominance prediction error block of said macroblock; and
- means for indicating that the inter-coded image information for the image block is considered to contain at least one error if any of said first reference value for said at least one luminance prediction error block or said first reference value for said at least one chrominance prediction error block of said macroblock falls outside said first value range.

37. (Original) A terminal according to claim 36, wherein said means for performing a prediction error block check further comprise:

- means for performing said first calculation stage and said first comparison stage consecutively for each of said at least one luminance prediction error block and each of said at least one chrominance prediction error block of said macroblock in a sequence; and

- means for terminating the sequence if any of said first reference value for said at least one luminance prediction error block or said first reference value for said at least one chrominance prediction error block of said macroblock falls outside said first value range.

38. (Original) A terminal according to claim 36, wherein said means for performing a prediction error block check comprise means for performing said first calculation stage and said first comparison stage substantially immediately as each of said at least one luminance prediction error block or each of said at least one chrominance prediction error block of said macroblock is received.

39. (Original) A terminal according to claim 36, wherein said means for performing a prediction error block check comprise means for performing said first calculation stage and said first comparison stage for each of said at least one luminance prediction error block and each of said at least one chrominance prediction error block of said macroblock after all of said at least one luminance prediction error block and all of said at least one chrominance prediction error block of said macroblock have been received.

40. (Original) A terminal according to claim 36, wherein said means for performing a prediction error block check comprise means for assigning a first value to said first value range when said comparison stage is performed on said at least one luminance prediction error block of said macroblock and means for assigning a second value, different from said first value, to said first value range when said first comparison stage is performed on

said at least one chrominance prediction error block of said macroblock.

41. (Original) A terminal according to claim 36 wherein said means for performing a prediction error block check comprise means for storing said first reference value in a memory of said terminal if said first reference value calculated for any of said at least one luminance prediction error block or any of said at least one chrominance prediction error block of said macroblock falls within said first value range.

42.-44. (Cancelled)

45. (Currently Amended) A terminal according to claim ~~43~~ 68, wherein said means for performing a macroblock check further comprise:

- means for retrieving a first reference value stored in a memory of said terminal by said means for performing a prediction error block check; and
- means for setting said second reference value to said first reference value.

46. (Currently Amended) A terminal according to claim ~~43~~ 68, wherein said means for performing a macroblock check further comprise means for repeating said second comparison stage if said difference calculated on the basis of said at least one luminance prediction error block and said at least one chrominance prediction error block falls within said third value range and said macroblock comprises at least one other chrominance prediction error block said means for repeating said

second comparison stage being arranged to repeat said second comparison stage using said at least one other chrominance prediction error block.

47. (Currently Amended) A terminal according to claim ~~43~~ 68, wherein said means for performing a macroblock check further comprise means for repeating said second comparison stage if said second reference value falls within said second value range and said macroblock comprises at least one other chrominance prediction error block, said means for repeating said second comparison stage being arranged to repeat said second comparison stage using said at least one other chrominance prediction error block.

48. (Cancelled)

49. (Currently Amended) A terminal according to claim ~~48~~ 69, wherein said means for filtering said pixel error values comprise means for thresholding the pixel error values of said at least one luminance prediction error block and said at least one chrominance prediction error block of said macroblock.

50. (Currently Amended) A terminal according to claim ~~48~~ 69, wherein said means for filtering said pixel error values comprise means for high-pass filtering the pixel error values of said at least one luminance prediction error block and said at least one chrominance prediction error block of said macroblock.

51. (Currently Amended) A terminal according to claim ~~48~~ 69, wherein a spatial resolution of said at least one luminance prediction error block of said macroblock is greater than a spatial resolution of said at least one chrominance prediction

error block of said macroblock, and that the terminal further comprises means for down-sampling the pixel error values of said at least one luminance prediction error block so as to reduce the spatial resolution of said at least one luminance prediction error block to correspond with the spatial resolution of said at least one chrominance prediction error block.

52. (Currently Amended) A terminal according to claim ~~48~~69, wherein a spatial resolution of said at least one luminance prediction error block of said macroblock is greater than a spatial resolution of said at least one chrominance prediction error block of said macroblock, and that the terminal further comprises means for up-sampling the pixel error values of said at least one chrominance prediction error block so as to increase the spatial resolution of said at least one chrominance prediction error block to correspond with the spatial resolution of said at least one luminance prediction error block.

53. (Currently Amended) A terminal according to claim ~~31~~68, wherein it is a wireless terminal.

54.- 66. (Cancelled)

67. (New) A method for detecting errors in an image signal, in which the image signal is produced by dividing an image into image blocks, and a coding stage is performed in which at least predictive coding is performed on an image block to produce inter-coded image information comprising at least one prediction error block containing prediction error information, and a decoding stage is performed to recover prediction error information contained in said at least one prediction error block, wherein a prediction error block check is performed in

which prediction error information contained in said at least one prediction error block is examined to detect errors in the inter-coded image information for the image block, said inter-coded image information for the image block comprises a macroblock comprising at least one luminance prediction error block containing prediction error information relating to a luminance component of the image signal and at least one chrominance prediction error block containing prediction error information relating to a chrominance component of the image signal, said image signal comprising at least one chrominance component, the prediction error information contained in said at least one luminance prediction error block and said at least one chrominance prediction error block of said macroblock comprise pixel error values and said pixel error values of said at least one luminance prediction error block and said pixel error values of said at least one chrominance prediction error block are filtered to determine pixel error values of said at least one luminance prediction error block and said at least one chrominance prediction error block which are significant with respect to a threshold value and a third comparison stage is performed in which significant pixel error values comprised by said at least one chrominance prediction error block of said macroblock are compared with pixel error values at corresponding locations in said at least one luminance prediction error block, wherein if the number of locations for which a pixel error value in said at least one chrominance prediction error block is significant with respect to said threshold value and a pixel error value at a corresponding location in said at least one luminance prediction error block is not significant with respect to said threshold value exceeds a fourth value range, the inter-coded image information for the image block is considered to contain at least one error.

68. (New) A terminal comprising means for receiving an image signal, the image signal having been formed by dividing an image into image blocks and performing a coding stage using at least predictive coding on an image block to produce inter-coded image information for the image block said inter-coded image information comprising at least one prediction error block containing prediction error information, and decoding means for recovering prediction error information contained in said at least one prediction error block, wherein the terminal also comprises means for performing a prediction error block check in which prediction error information contained in said at least one prediction error block is examined to detect errors in the inter-coded image information for the image block, means for producing macroblocks comprising at least one luminance prediction error block containing prediction error information relating to a luminance component of the image signal and at least one chrominance prediction error block containing prediction error information relating to a chrominance component of the image signal, said image signal comprising at least one chrominance component, means for performing a macroblock check if no errors are detected by said means for performing a prediction error block check, said means for performing a macroblock check comprising means for examining a correspondence between prediction error information relating to a luminance component of the image signal and prediction error information relating to at least one of said at least one chrominance component of the image signal to detect errors in the inter-coded image information for the image block, wherein said means for performing a macroblock check further comprise:

means for performing a second comparison stage in which a second reference value calculated on the basis of said at least one chrominance prediction error block of said macroblock is compared with a second value range;

means for calculating a difference on the basis of said at least one luminance prediction error block and said at least one chrominance prediction error block of the macroblock if said second reference value falls outside said second value range;

means for comparing said difference with a third value range;

means for indicating that the inter-coded image information for the image block is considered to contain at least one error if said difference falls outside said third value range, means for setting said second reference value equal to said first reference value calculated for said at least one chrominance prediction error block of said macroblock by said means for performing a prediction error block check.

69. (New) A terminal comprising means for receiving an image signal, the image signal having been formed by dividing an image into image blocks and performing a coding stage using at least predictive coding on an image block to produce inter-coded image information comprising at least one prediction error block containing prediction error information, and decoding means for recovering prediction error information contained in said at least one error block, wherein the terminal also comprises means

for performing a prediction error block check in which prediction error information contained in said at least one prediction error block is examined to detect errors in the inter-coded image information for the image block, a terminal comprising means for receiving an image signal, the image signal having been formed by dividing an image into image blocks and performing a coding state using at least predictive coding on an image block to produce inter-coded image information for the image block said inter-coded image information comprising at least one prediction error block containing prediction error information, and decoding means for recovering prediction error information contained in said at least one prediction error block, wherein the terminal also comprises means for performing a prediction error block check in which prediction error information contained in said at least one prediction error block is examined to detect errors in the inter-coded image information for the image block, means for producing macroblocks comprising at least one luminance prediction error block containing prediction error information relating to a luminance component of the image signal and at least one chrominance prediction error block containing prediction error information relating to a chrominance component of the image signal, said image signal comprising at least one chrominance component, wherein the prediction error information contained in said at least one luminance prediction error block and said at least one chrominance prediction error block of said macroblock comprise pixel error values and the terminal further comprises:

means for filtering said pixel error values of said at least one luminance prediction error block and said at least one chrominance prediction error block of said macroblock to determine pixel error values of said at least one luminance prediction error block and said at least one chrominance

prediction error block which are significant with respect to a threshold value;

means for performing a third comparison stage in which significant pixel error values comprised by said at least one chrominance prediction error block are compared with pixel error values at corresponding locations in said at least one luminance prediction error block; and

means for indicating that the inter-coded image information for the image block is considered to contain at least one error if the number of locations for which a pixel error value in said at least one chrominance prediction error block is significant with respect to said threshold value and a pixel error value at a corresponding location in said at least one luminance prediction error block is not significant with respect to said threshold value exceeds a fourth value range.